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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,689	08/11/2003	Yi-Chen Chang	10870-US-PA	1688

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JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
BODDIE, WILLIAM	
ART UNIT	**PAPER NUMBER**
2674	

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,689	CHANG ET AL.	
	Examiner	Art Unit	
	William Boddie	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty et al. (US 6,076,734) in view of Sayuda et al. (US 6,069,636).

With respect to claim 1, Dougherty discloses a non-touch panel input device (350 in fig. 10).

Dougherty does not expressly disclose, wherein the pixel array at least comprises a plurality of first pixel structures with each pixel structure at least comprising: a sub-pixel; and a first shadow pixel positioned on one side of the sub-pixel.

Sayuda discloses, a pixel array at least comprising a plurality of first pixel structures with each pixel structure at least comprising: a sub-pixel; and a first shadow pixel positioned on one side of the sub-pixel (fig. 9, contains subpixels in the first and third line, with "shadow pixels", in line two, on one side of the subpixels). (While Sayuda is directed towards printed media, the printed pixels still fulfill all limitations claimed by the applicant in claim 1. For discussion of the printed pixels in fig. 9, see col. 7, lines 10-18).

Sayuda and Dougherty are analogous art because they are from the same field of endeavor namely, encoding of data within an image.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to replace the encoded images of Dougherty with the embedded data images of Sayuda.

The motivation for doing so would have been to embed a larger amount of additional information in an image (Sayuda, col. 2, lines 54-55).

Therefore it would have been obvious to combine Sayuda and Dougherty for the benefit of encoding a larger amount of data to obtain the invention as specified in claim 1.

With respect to claim 2, Sayuda and Dougherty disclose, the pixel array of claim 1 (see above).

Dougherty further discloses using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

With respect to claim 3, Sayuda and Dougherty disclose, the pixel array of claim 1 (see above).

Dougherty further discloses, four different infrared inks to encode data (fig. 7 and col. 33-54). These inks will emit different wavelengths of IR light and thus exist in different electromagnetic radiation states.

With respect to claim 4, Sayuda and Dougherty disclose, the pixel array of claim 3 (see above).

Sayuda further discloses, wherein the first shadow pixel in one state has a length or width different from the first shadow pixel in the second state (note figs. 18 and 19, and their encoded pixels with varying lengths and widths).

With respect to claim 5, Sayuda and Daugherty disclose, the pixel array of claim 3 (see above).

Daugherty further discloses, wherein the first electromagnetic radiation state has a reflectivity different from the second electromagnetic radiation state (col. 10, lines 16-32; discloses the measuring of the different reflected intensities of the different colored inks and using this measurement to decode the values).

With respect to claim 6, Sayuda and Dougherty disclose, the pixel array of claim 3 (see above).

Dougherty further discloses, wherein the first electromagnetic radiation state radiates with a wavelength different from the second electromagnetic radiation state (IR1, IR2, IR3, and IR4 all radiate with different wavelengths of infrared light).

With respect to claim 7, Sayuda and Dougherty disclose, the pixel array of claim 3 (see above).

Dougherty further discloses, wherein the first electromagnetic radiation state is fabricated using a material different from the second electromagnetic radiation state (IR1, IR2, IR3, and IR4 would all require different inks in order to radiate different wavelengths of light).

3. Claims 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty et al. (US 6,076,734) in view of Sayuda et al. (US 6,069,636) and further in view of Weibe (US 6,689,966).

With respect to claim 8, Sayuda and Dougherty disclose the pixel array of claim 1 (see above).

Neither Sayuda nor Dougherty expressly disclose, wherein each first pixel structure furthermore comprises a second shadow pixel positioned on the other side of the sub-pixel.

Weibe discloses two data encoding regions on two sides of a pixel (55, 57 in fig. 5c).

Sayuda, Dougherty and Weibe are analogous art because they are directed to a similar problem solving area, namely encoding data into an image.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include a second encoding area, disclosed by Weibe, in the pixel structure of Sayuda and Dougherty.

The motivation for doing so would have been to encode even more data in the image.

Therefore, it would have been obvious to combine Weibe with Sayuda and Dougherty for the benefit of more encoded data to obtain the invention as specified in claim 8.

With respect to claim 9, Sayuda, Dougherty and Weibe disclose, the pixel array of claim 8 (see above).

Weibe further discloses, wherein the second shadow pixel is fabricated using a material capable of producing electromagnetic radiation in the invisible portion of the spectrum (col. 10, lines 11-18).

With respect to claim 10, Sayuda, Dougherty and Weibe disclose, the pixel array of claim 8 (see above).

Neither Sayuda or Weibe disclose, wherein the second shadow pixel is set to emit electromagnetic radiation either in a third electromagnetic radiation state or in a fourth electromagnetic radiation state such that the third and the fourth electromagnetic radiation state are different from each other.

Dougherty further discloses, four different infrared inks to encode data (fig. 7 and col. 33-54). These inks will emit different wavelengths of IR light and thus exist in different electromagnetic radiation states.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to print the second shadow pixel, disclosed by Weibe, with a different ink as disclosed by Dougherty.

The motivation for doing so would have been to have different associations with each shadow pixel, i.e. different meanings, when a certain shadow pixel or ink is detected (Dougherty, col. 10, lines 50-54).

Therefore, it would have been obvious to combine Weibe, Daugherty, and Sayuda for the benefit of additional functionality to obtain the invention as specified in claim 10.

With respect to claim 11, Sayuda, Weibe, and Daugherty disclose the pixel array of claim 10 (see above).

Sayuda further discloses, wherein the second shadow pixel in the third state has a length or width different from the second shadow pixel in the fourth state (note figs. 18 and 19, and their encoded pixels with varying lengths and widths).

With respect to claim 12, Sayuda, Weibe, and Daugherty disclose, the pixel array of claim 10 (see above).

Daugherty further discloses, wherein the third electromagnetic radiation state has a reflectivity different from the fourth electromagnetic radiation state (col. 10, lines 16-32; discloses the measuring of the different reflected intensities of the different colored inks and using this measurement to decode the values).

With respect to claim 13, Sayuda, Weibe, and Daugherty disclose, the pixel array of claim 10 (see above).

Daugherty further discloses, wherein the third electromagnetic radiation state radiates with a wavelength different from the fourth electromagnetic radiation state (IR1, IR2, IR3, and IR4 all radiate with different wavelengths of infrared light).

With respect to claim 14, Sayuda, Weibe, and Daugherty disclose, the pixel array of claim 10 (see above).

Daugherty further discloses, wherein the third electromagnetic radiation state is fabricated using a material different from the fourth electromagnetic radiation state (IR1, IR2, IR3, and IR4 would all have to be different inks in order to radiate different wavelengths of light).

With respect to claim 15, Sayuda and Dougherty disclose, the pixel array of claim 1 (see above).

Weibe discloses, wherein the pixel array furthermore comprises a plurality of second pixel structures (fig. 5a) with each second pixel at least having a sub-pixel without a first shadow pixel such that the sub-pixel in each second pixel structure is located in a position corresponding to the sub-pixel of the first pixel structure (note the lack of fig. 5c's element 57 in fig. 5a).

With respect to claim 16, Sayuda, Dougherty and Weibe disclose, the pixel array of claim 15 (see above).

Weibe further discloses, wherein each second pixel structure furthermore comprises a second shadow pixel (52 in fig. 5a) positioned on the other side of the sub-pixel corresponding to the second shadow pixel in the first pixel structure (56 in fig. 5c).

With respect to claim 17, Sayuda, Daugherty and Weibe disclose, the pixel array of claim 16 (see above), and using a pale, uniform color to discreetly encode the data (Sayuda, col. 11, lines 11-15)

Neither Sayuda nor Weibe expressly disclose, wherein the first shadow pixel is fabricated using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum.

Dougherty discloses, using a material capable of producing electromagnetic radiation in the invisible portion of the light spectrum (note IR1 in figs. 7 and 8, also col. 10, lines 33-45).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bowen (US 5,771,414) discloses encoding data onto the edges of camera film. Misawa (US 6,791,619) discloses encoding data onto LCD screen edges and onto upper glass substrates of the LCD.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wlb
10-26-05

REGINA LIANG
PRIMARY EXAMINER